

NORTH CAROLINA BROWNFIELDS PROGRAM ENVIRONMENTAL MANAGEMENT PLAN

This form is to be used to prepare an Environmental Management Plan (EMP) for projects in the North Carolina Brownfields Program at the direction of a project manager for the program. Prospective Developers and/or their consultants must complete and submit this form and all pertinent attachments to their project manager prior to any site earthmoving or other development related activities. For the resultant EMP to be valid for use, it must be completed, reviewed by the program, and signed by all signers at the bottom. Consult your project manager if you have questions.

GENERAL INFORMATION

Date: 4/25/2016

Brownfields Assigned Project Name: Former Sealtest Dairy

Brownfields Project Number: 20023-16-018

Brownfields Property Address: 2115 US Highway 70 SE

Brownfields Property Area (acres): 1.7 acres

Is Brownfields Property Subject to RCRA Permit? Yes No

If yes enter Permit No.: [Click here to enter text.](#)

Is Brownfields Property Subject to a Solid Waste Permit? Yes No

If yes, enter Permit No.: [Click here to enter text.](#)

COMMUNICATIONS

Prospective Developer (PD): HICKORY, NC (2115 US HWY 70 SE) LLC

Phone Numbers: Office: 630-617-9151.....Mobile: 630-418-5220

Email: duebelhor@insiterealestate.com

Primary PD Contact: Dan Uebelhor

Phone Numbers: Office: 630-617-9151 Mobile: 630-418-5220

Email:

Environmental Consultant: ECS Carolinas, LLP

Phone Numbers: Office: 336-856-7150.....Mobile: 336-880-9370

Email: jstewart1@ecslimited.com

Brownfields Program Project Manager: Joselyn Harriger

Office: Charlotte

Email: joselyn.harriger@ncdenr.gov

Other DENR Program Contacts (if applicable, i.e., UST Section, Inactive Hazardous Site Branch, Hazardous Waste, Solid Waste): [Click here to enter text.](#)

NOTIFICATIONS TO THE BROWNFIELDS PROGRAM

Advance Notification Times to Brownfields Project Manager: Check each box to accept minimum notice periods (in calendar days) for each type of onsite task:

- | | |
|---|---|
| On-site assessment or remedial activities: | Within 10 days <input checked="" type="checkbox"/> |
| Construction or grading start: | Within 10 days <input checked="" type="checkbox"/> |
| Discovery of stained soil, odors, USTs, buried drums or waste, landfill, or other signs of previously unknown contamination: | Within 48 hours <input checked="" type="checkbox"/> |
| Implementation of emergency actions (e.g. dewatering, flood, or soil erosion control measures in area of contamination, venting of explosive environments): | Within 48 hours <input checked="" type="checkbox"/> |
| Installation of mitigation systems: | Within 10 days <input checked="" type="checkbox"/> |
| Other notifications as required by local, state or federal agencies to implement redevelopment activities: (as applicable): | Within 30 days <input checked="" type="checkbox"/> |

REDEVELOPMENT PLANS

1) Type of Redevelopment (check all that apply):

- Residential Recreational Institutional Commercial Office Retail Industrial
 Other specify: restaurant

2) Summary of Redevelopment Plans (attach conceptual or detailed plans as available):

- a) Do plans include demolition of structure(s)?: Yes No Unknown
- b) Do plans include removal of building foundation slab(s) or pavement:
 Yes No Unknown
- c) Provide brief summary of redevelopment plans, including demolition, removal of building slabs/pavement and other structures: The three structures on the site, one commercial and two residential, are scheduled to be demolished April 28, 2016. Following removal of the buildings, the grading contractor will balance the site by digging into the slope north of the commercial structure and using the fill to balance the site; i.e. raise the south and north sides of the site. A utility trench for the storm water will be excavated (east to west) north of the proposed building. A copy of the grading plan and utility plan are attached. A new 6,900 SF Commercial / Restaurant building will be constructed, along with associated parking and utility improvements.

3) Which category of risk-based screening level is used or is anticipated to be specified in the Brownfields Agreement?

- Residential Non-residential or Industrial/Commercial

Note: If children frequent the property, residential screening levels shall be cited in the Brownfields Agreement for comparison purposes.

4) Schedule for Redevelopment (attach construction schedule):

a) Phase I start date and anticipated duration (specify activities during each phase):

April 28, 2016 – Three week duration for demolition of the buildings, mass grading and installation of stormwater sedimentation basins.

b) If applicable, Phase 2 start date and anticipated duration (specify activities during each phase):

May 20, 2016 – Four month duration consisting of utilities, building and paving

c) Additional phases planned? If yes, specify activities if known:

- Yes No Not in the foreseeable future Decision pending

d) Provide the planned date of occupancy for new buildings: 9/16/2016

CONTAMINATED MEDIA

Contaminated Media (attach tabulated data summaries for each impacted media and figure(s) with sample locations):

Part 1. Soil: Yes No Suspected

Part 2. Groundwater: Yes No Suspected

Part 3. Surface Water: Yes No Suspected

Part 4. Sediment: Yes No Suspected

Part 5. Soil Vapor: Yes No Suspected

Part 6. Sub-Slab Soil Vapor: Yes No Suspected

Part 7. Indoor Air: Yes No Suspected

PART 1. SOIL – Please fill out the information below, using detailed site plans, if available, or estimate using known areas of contaminated soil and a conceptual redevelopment plan. Provide a figure overlaying new construction onto figure showing contaminated soil and groundwater locations.

1) **Known or suspected contaminants in soil (list specific compounds):** Chromium (III) 26.8 to 54.2 ppm; total lead 34.9 to 18.9 ppm; chromium (VI) not detected above reporting limit (chromium therefore naturally occurring) near western residential structure. Petroleum hydrocarbons associated with the heating oil, diesel, and gasoline USTs.

2) **Depth of known or suspected contaminants (feet):** 3 to 5 feet for metals and between 8 and 17 feet for USTs

- 3) **Area of soil disturbed by redevelopment (square feet):** Metals by residence naturally occurring and collected from boring adjacent to one of the residences. No cut proposed for this area of the site, fill area. May possibly encounter impacted soil during trench excavation for the utility trench and excavation of the sedimentation basin on the west side of the site. Figure attached.
- 4) **Depths of soil to be excavated (feet):** 0 to 4 feet
- 5) **Estimated volume of soil (cubic yards) to be excavated (attach grading plan):** none expected
- 6) **Estimated volume of excavated soil (cubic yards) anticipated to be impacted by contaminants:** none
- 7) **Estimated volume of contaminated soil expected to be disposed of offsite, if applicable:** none

IMPORTED FILL SOIL

- 1) Will fill soil be imported to the site? Yes No Unknown
- 2) If yes, what is the estimated volume of fill soil to be imported? [Click here to enter text.](#)
- 3) If yes, what is the depth of fill soil to be used at the property? [Click here to enter text.](#)
If a range of depths, please list the range.
- 4) **PRIOR TO ITS PLACEMENT AT THE BROWNFIELDS PROPERTY**, provide plan to analyze fill soil to demonstrate that it meets acceptable standards and can be considered clean for use at the Brownfields property (Check all that apply):
 - Volatile organic compounds (VOCs) by EPA Method 8260
 - Semi-volatile organic compounds (SVOCs) by EPA Method 8270
 - Metals RCRA List (8) (arsenic, barium, cadmium, chromium (speciated), mercury, lead, selenium and silver)
 - Metals –Hazardous Substance List -14 (antimony, arsenic, beryllium, cadmium, chromium (speciated according to IHSB protocol), copper, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc)
 - Metals – EPA Priority Pollutant List – 13 (arsenic, beryllium, cadmium, chromium (speciated according to IHSB protocol), copper, mercury, nickel, lead, antimony, selenium, silver, thallium, and zinc)
 - Other Constituents & Analytical Method: [Click here to enter text.](#)
 - Known borrow material (DESCRIBE SOURCE AND ATTACH SAMPLING PROFILE): [Click here to enter text.](#)

MANAGING ONSITE SOIL

- 1) If soil in known or suspected areas of contamination is anticipated to be excavated from the Brownfield Property, relocated on the Brownfields Property, or otherwise disturbed during site grading or other redevelopment activities, please provide a grading plan that clearly illustrates areas of cut and fill (approximate areas & volumes are acceptable, if only preliminary data available).
- 2) **HAZARDOUS WASTE DETERMINATION** – Does the soil contain a LISTED WASTE as defined in the North Carolina Hazardous Waste Section under [40 CFR Part 261.31-261.35](#)? Yes No

If yes, explain why below, including the level of knowledge regarding processes generating the waste(include pertinent analytical results as needed). [Click here to enter text.](#)

If yes, do the soils exceed the “Contained-Out” levels in Attachment 1 of the [North Carolina Contained-In Policy](#)? Yes No

NOTE: IF SOIL MEETS THE DEFINITION OF A LISTED HAZARDOUS WASTE AND EXCEEDS THE CONTAINED-OUT LEVELS IN ATTACHMENT 1 TO [THE NORTH CAROLINA CONTAINED-IN POLICY](#) THE SOIL MAY NOT BE RE-USED ON SITE AND MUST BE DISPOSED OF IN ACCORDANCE WITH DENR HAZARDOUS WASTE SECTION RULES AND REGULATIONS.

3) HAZARDOUS WASTE DETERMINATION – Does the soil contain a CHARACTERISTIC WASTE?:
 Yes No

If yes, mark reason(s) why below (and include pertinent analytical results).

- Ignitability
- Corrosivity
- Reactivity
- Toxicity
- TCLP results
- Rule of 20 results (20 times total analytical results for an individual hazardous constituent on TCLP list cannot, by test method, exceed regulatory TCLP standard)

If no, explain rationale: Soil to be cut from the slope behind the building is not known to be contaminated.

NOTE: IF SOIL MEETS THE DEFINITION OF A CHARACTERISTIC HAZARDOUS WASTE, THE SOIL MAY NOT BE RE-USED ON SITE AND MUST BE DISPOSED OF IN ACCORDANCE WITH DENR HAZARDOUS WASTE SECTION RULES AND REGULATIONS.

4) Screening criteria by which soil disposition decisions will be made (e.g., left in place, capped in place with low permeability barrier, removed to onsite location and capped, removed offsite):

- Preliminary Health-Based Residential SRGs [Click here to enter a date.](#)
- Preliminary Health-Based Industrial/Commercial SRGs 5/20/2016
- Site-specific risk-based cleanup level, or acceptable concentrations determined via

calculated cumulative risk. Enter details of methods used for determination/explanation:

Five soil samples will be collected from areas which will be vegetated once the site grading is complete. The samples will be collected in accordance with NCDWM IHSB protocol as described in the most recent version of “Guidelines for Assessment and Remediation”. Each sample will be analyzed by EPA method 8260 and 8270.

5) Check the following action(s) to be taken during excavation and management of said soils:

Manage fugitive dust from site:

Yes No

If yes, describe method; If no, explain rationale: If dust is an issue a water truck will be used to wet the soil.

Field Screening:

Yes No

If yes, describe method; If no, explain rationale: Grading contractor will screen soil for staining and odor during excavation. A technician will be on site during the excavation of the utility trench and sedimentation basin. If suspect soils are encountered, the grading contractor will stop work in the area and ECS will be contacted and the soil will be screened with a PID/FID.

Soil Sample Collection:

Yes No

If yes, describe method (e.g., in-situ grab, composite, stockpile, etc.); If no, explain rationale: Soil being excavated is being used for onsite fill and will either be placed in the area of the proposed building pad and parking lot or will be placed on the north side of the site. If impacted soil is discovered it will either be placed immediately in a low area and covered with a minimum one foot thick cap of clean soil before the end of the day or the soil will be temporarily stockpiled until the placement area is prepared and/or sufficient clean soil (cap) is available. Impacted soil from the UST areas may also be placed in the basement of the western house and covered with a minimum of two feet of clean fill. If areas of impacted soil are discovered, other than in the areas of the USTs, a sample will be collected and analyzed by EPA Method 8260 and 8270. Additional analysis will be performed if warranted. The Brownfields Project Manager will be notified if other areas of impacted soil are discovered other than those currently known or suspected.

Stockpile impacted soil in accordance with NCDENR IHSB protocol in the current version of the "Guidelines for Assessment and Cleanup", and providing erosion control, prohibiting contact between surface water/precipitation and contaminated soil, and preventing contaminated runoff. Explain any variances:

Analyze potentially impacted soil for the following chemical analytes:

Volatile organic compounds (VOCs) by EPA Method 8260

Semi-volatile organic compounds (SVOCs) by EPA Method 8270

Metals RCRA List (8) (arsenic, barium, cadmium, chromium (speciated), mercury, lead, selenium and silver)

Metals –Hazardous Substance List -14 (antimony, arsenic, beryllium, cadmium, chromium (speciated according to IHSB protocol), copper, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc)

Metals – EPA Priority Pollutant List – 13 (arsenic, beryllium, cadmium, chromium (speciated according to IHSB protocol), copper, mercury, nickel, lead, antimony, selenium, silver, thallium, and zinc)

Other Constituent(s) & Analytical Method(s): Click here to enter text.

Proposed Measures to Obtain Pre-Approval for Reuse of Impacted Soil within the Brownfields Property Boundary

- Provide documentation of analytical report(s) to Brownfields Project Manager
 - Provide documentation of final location, thickness and depth of relocated soil on site map to Brownfields Project Manager once known
 - Use geotextile to mark depth of fill material (provide description of material)
 - Manage soil under impervious cap or clean fill
- Describe cap or fill: A minimum 2 foot cap of clean fill from site. (provide location diagram)
- Confer with NC BF Project Manager if Brownfield Plat must be revised (or re-recorded if actions are Post-Recordation).
 - Other: [Click here to enter text.](#)

Final grade sampling of exposed soil (i.e., soil that will not be under buildings or permanent hardscape): [if not checked provide rationale for not needing]

Provide diagram of soil sampling locations, number of samples, and denote Chemical Analytical Program with check boxes below (Check all that apply):

- Volatile organic compounds (VOCs) by EPA Method 8260
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270
- Metals RCRA List (8) (arsenic, barium, cadmium, chromium (speciated), mercury, lead, selenium and silver)
- Metals –Hazardous Substance List -14 (antimony, arsenic, beryllium, cadmium, chromium (speciated according to IHSB protocol), copper, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc)
- Metals – EPA Priority Pollutant List – 13 (arsenic, beryllium, cadmium, chromium (speciated according to IHSB protocol), copper, mercury, nickel, lead, antimony, selenium, silver, thallium, and zinc)
- Pesticides
- PCBs
- Other Constituents & Analytical Method: [Click here to enter text.](#)

OFFSITE TRANSPORT & DISPOSITION OF EXCAVATED SOIL

NOTE: Unless soil will be transported offsite for disposal in a permitted facility under applicable regulations, no contaminated or potentially contaminated soil may leave the site without approval from the brownfields program. Failure to obtain approval may violate a brownfields agreement, endangering liability protections and making said action subject to enforcement. Justifications provided below must be approved by the Program in writing prior to completing transport activities.

Transport and dispose of impacted soil offsite (documentation of final disposition must be sent to Brownfields Project Manager)

- Landfill – analytical program determined by landfill
- Landfarm or other treatment facility Petroleum impacted soil will be taken to Environmental Soils in Latitmore, North Carolina.
- Use as Beneficial Fill Offsite – provide justification: [Click here to enter text.](#)
- Use as Beneficial Fill at another Suitable Brownfields Site – (Note: a determination that a site is a “Suitable Brownfields” site will require, at a minimum, that similar concentrations of the same or similar contaminants already exist at both sites, use of impacted soil as beneficial soil will not

increase the potential for risk to human health and the environment at that site, and that notarized documentation of the acceptance of such soil from the property owner of the receiving site is provided to Brownfields. Provide justification: [Click here to enter text.](#)

MANAGEMENT OF UTILITY TRENCHES

Install liner between native impacted soils and base of utility trench before filling with clean fill (Preferred)

Last out, first in principle for impacted soils (if soil can safely be reused onsite and is not a hazardous waste), i.e., impacted soils are placed back at approximately the depths they were removed from such that impacted soil is not placed at a greater depth than the original depth from which it was excavated.

Evaluate whether necessary to install barriers in conduits to prevent soil vapor transport, and/or degradation of conduit materials due to direct impact with contaminants? Result: Yes No

If no, include rationale here. [Click here to enter text.](#)

If yes, provide specifications on barrier materials

Other comments regarding managing impacted soil in utility trenches: The liner will consist of six mil plastic

PART 2. GROUNDWATER – Please fill out the information below and attach figure showing distribution of groundwater contaminants at site

What is the depth to groundwater at the Brownfields Property? 43 to 45 ft

Is groundwater known to be contaminated by onsite offsite both or unknown sources? Describe source(s): Former auto repair facility located on adjacent property east of the site (now a car wash). Groundwater analysis summarized in Table 1 attached.

What is the direction of groundwater flow at the Brownfields Property? Not determined but believed to be to the south based on surface topography.

Will groundwater likely be encountered during planned redevelopment activities? Yes No
If yes, describe these activities: [Click here to enter text.](#)

In the event that contaminated groundwater is encountered during redevelopment activities (even if no is checked above), list activities for contingent management of groundwater (e.g., dewatering of groundwater from excavations or foundations, containerizing, offsite disposal, discharge to sanitary sewer, or sampling procedures): [Click here to enter text.](#)

PART 3. SURFACE WATER – Please fill out the information below.

Attach a map showing the location of surface water at the Brownfields Property.

Is surface water at the property known to be contaminated: Yes No

Will workers or the public be in contact with surface water during planned redevelopment activities?
 Yes No

In the event that contaminated surface water is encountered during redevelopment activities, or clean surface water enters open excavations, list activities for management of such events (e.g. flooding, contaminated surface water run-off, stormwater impacts): [Click here to enter text.](#)

PART 4. SEDIMENT – Please fill out the information below.

Is sediment at the property known to be contaminated: Yes No

Will workers or the public be in contact with sediment during planned redevelopment activities?
 Yes No

If yes, attach a map showing location of known contaminated sediment at the property.

In the event that contaminated sediment is encountered during redevelopment activities, list activities for management of such events (stream bed disturbance): [Click here to enter text.](#)

PART 5. SOIL VAPOR – Please fill out the information below.

Do concentrations of volatile organic compounds at the Brownfields property exceed the following vapor intrusion screening levels in the following media:

IHSB Residential Screening Levels:

Soil Vapor: Yes No Unknown
Groundwater: Yes No Unknown

IHSB Industrial/Commercial Screening Levels:

Soil Vapor: Yes No Unknown
Groundwater: Yes No Unknown

Attach a map showing the location of soil vapor contaminants that exceed site screening levels.

If applicable, at what depth(s) is soil vapor known to be contaminated? [Click here to enter text.](#)

Will workers encounter contaminated soil vapor during planned redevelopment activities?
 Yes No Unknown

In the event that contaminated soil vapor is encountered during redevelopment activities (trenches, manways, basements or other subsurface work, list activities for management of such contact: Remove workers from area until the vapor concentrations can be determined, use engineering controls; i.e. fans to reduce vapor concentrations

PART 6. SUB-SLAB SOIL VAPOR -please fill out the information below if existing buildings or foundations will be retained in the redevelopment.

Are sub-slab soil vapor data available for the Brownfields Property? Yes No Unknown

If data indicate that sub-slab soil vapor concentrations exceed screening levels, attach a map showing the location of these exceedances.

At what depth(s) is sub-slab soil vapor known to be contaminated? 0-6 inches Other, If other describe: [Click here to enter text.](#)

Will workers encounter contaminated sub-slab soil vapor during planned redevelopment activities? Yes No Unknown

In the event that contaminated soil vapor is encountered during redevelopment activities, list activities for management of such contact: [Click here to enter text.](#)

PART 7. INDOOR AIR – Please fill out the information below .

Are indoor air data available for the Brownfields Property? Yes No Unknown

If yes, attach a map showing the location where indoor air contaminants exceed site screening levels.

If the structures where indoor air has been documented to exceed risk-based screening levels will not be demolished as part of redevelopment activities, will workers encounter contaminated indoor air during planned redevelopment activities?

Yes No Unknown

In the event that contaminated indoor air is encountered during redevelopment activities, list activities for management of such contact: [Click here to enter text.](#)

PART 8 – Vapor Mitigation System – Please fill out the information below .

Is a vapor intrusion mitigation system proposed for this Brownfields Property?

Yes No Unknown

If yes, provide the date the plan was submitted to the Brownfields Program.

[Click here to enter a date.](#)

Attach the plan.

Has the vapor mitigation plan been approved by the NC Brownfields Program?

Yes No Unknown

Has the vapor mitigation plan been signed and sealed by a North Carolina professional engineer?

- Yes No

What are the components of the vapor intrusion mitigation system?

- Sub-slab depressurization system
- Sub-membrane depressurization system
- Block-wall depressurization system
- Drain tile depressurization system
- Passive mitigation methods
 - Vapor barriers
 - Perforated piping vented to exterior
- Other method: [Click here to enter text.](#)

PART 9. CONTINGENCY FOR ENCOUNTERING UNKNOWN TANKS, DRUMS, OR OTHER WASTE MATERIALS

Please provide a contingency plan in the event unknown tanks, drums, fuel lines, landfills, or other waste materials are encountered during site activities.

Check the following activities that will be conducted prior to commencing earth-moving activities at the site:

- Review of historic maps (Sanborn Maps, facility maps)
- Conducting geophysical surveys to evaluate the location of suspect UST, fuel lines, utility lines, etc.
- Interviews with employees/former employees/facility managers/neighbors

Notification to State Brownfields Project Manager, UST Section, Fire Department, and/or other officials, as necessary and appropriate, is required when new potential source(s) of contamination are discovered. See Notification Section on Page 1 for notification requirements.

POST-REDEVELOPMENT REPORTING

In accordance with the site's Brownfield Agreement, provide a report within the designated schedule to the State Brownfields Project Manager.

Check box to acknowledge consent to provide a redevelopment summary report in compliance with the site's Brownfields Agreement.

APPROVAL SIGNATURES



4/28/2016

Prospective Developer
Printed Name/Title/Company

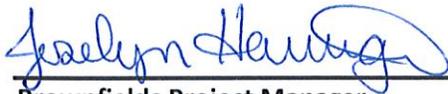
Date



4/28/2016

Consultant
John M. Stewart/Principal Geologist/ECS Carolinas, LLP

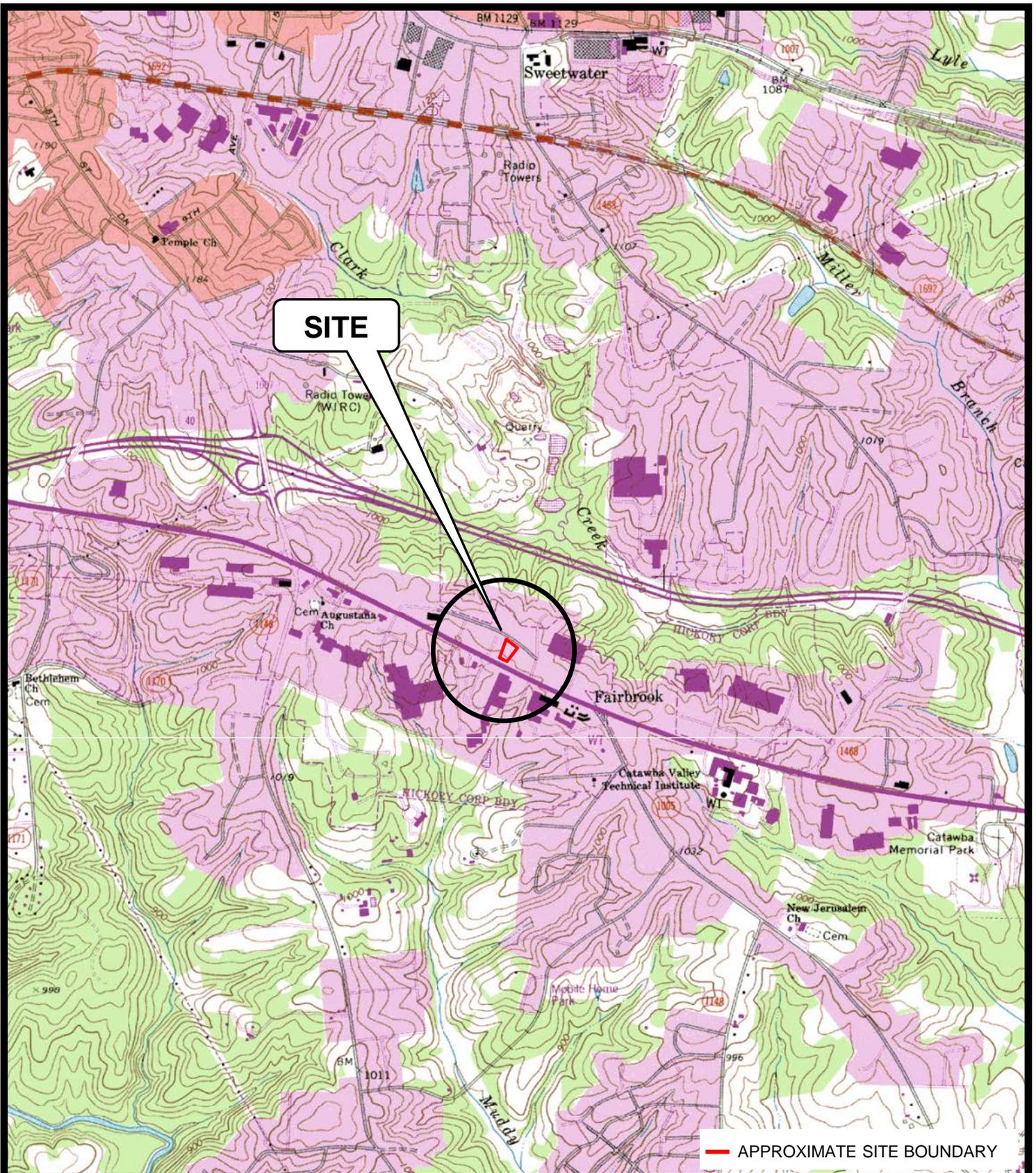
Date



4/29/2016

Brownfields Project Manager

Date



SOURCE:

USGS TOPOGRAPHIC MAP
 HICKORY, NORTH CAROLINA
 QUADRANGLE, DATED 1993

— = 2,000'



FIGURE 1

SITE LOCATION MAP

2115 HIGHWAY 70 SE
 HICKORY, CATAWBA COUNTY, NC
 ECS PROJECT NO. 49-1624B



LEGEND



CURRENT/FORMER AUTO REPAIR BUSINESS



APPROXIMATE SITE BOUNDARY

SOURCE:

CATAWBA COUNTY GIS WEBSITE
AERIAL PHOTOGRAPH, DATED 2014

— = 200'



FIGURE 2

SITE MAP

2115 HIGHWAY 70 SE
HICKORY, CATAWBA COUNTY, NC
ECS PROJECT NO. 49-1624B



SOURCE:

CATAWBA COUNTY GIS WEBSITE
AERIAL PHOTOGRAPH, DATED 2014

SCALE = NTS

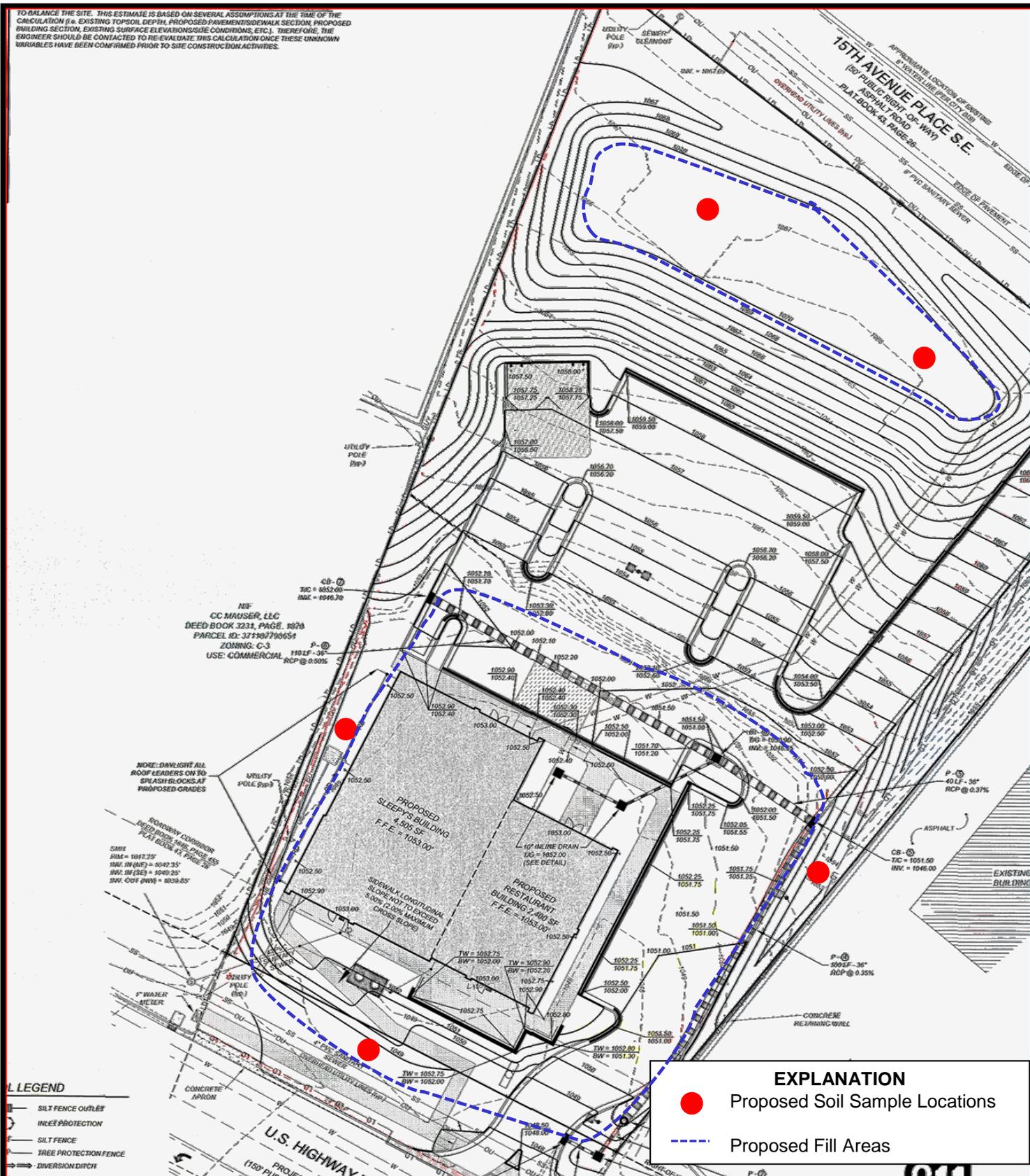


FIGURE 3

SAMPLE LOCATION MAP

2115 HIGHWAY 70 SE
HICKORY, CATAWBA COUNTY, NC
ECS PROJECT NO. 49-1624B

TO BALANCE THE SITE. THIS ESTIMATE IS BASED ON SEVERAL ASSUMPTIONS AT THE TIME OF THE CIRCULATION (I.E. EXISTING TOPSOIL DEPTH, PROPOSED PAVEMENTS/DRAINAGE SECTION, PROPOSED BUILDING SECTION, EXISTING SURFACE ELEVATIONS/SITE CONDITIONS, ETC.). THEREFORE, THE ENGINEER SHOULD BE CONTACTED TO RE-EVALUATE THIS CALCULATION ONCE THESE UNKNOWN VARIABLES HAVE BEEN CONFIRMED PRIOR TO SITE CONSTRUCTION ACTIVITIES.



LEGEND

- SILT FENCE OUTLET
- INLET PROTECTION
- SILT FENCE
- TREE PROTECTION FENCE
- DIVERSION DITCH

EXPLANATION

- Proposed Soil Sample Locations
- - - Proposed Fill Areas

SOURCE:



MODIFIED FROM COMMERCIAL
SITE DESIGNS' GRADING PLAN

SCALE = NTS



FIGURE 4

FINAL GRADE SAMPLE LOCATIONS

2115 HIGHWAY 70 SE
HICKORY, CATAWBA COUNTY, NC
ECS PROJECT NO. 49-1624B

TABLE 1: HISTOICAL GROUNDWATER RESULTS

Parameter	ANALYTICAL RESULTS				2L Standard	
	Location	MW-1	GWB-1	GWB-2		MW-1
Date Sampled		10/01/13	10/15/15		3/10/16	
VOCs by EPA Method 8260/602						
Chloroform		BQL	BQL	BQL	1.35	70
Tetrachloroethene		2.3	BQL	BQL	1.83	0.7
Trichloroflouromethane		2.4	BQL	BQL		2,000
SVOCs by EPA Method 8270						
All Targeted Compounds		NS	BQL	BQL	NS	--
Metals						
Chromium		NS	0.152	0.416	NS	0.010
Lead		NS	0.0179	0.0472	NS	0.015

Bold = Concentration exceeds the 2L Standard

BQL = Below the laboratory quantitation limit of the method of analysis

TABLE 1: SUMMARY OF SOIL ANALYTICAL RESULTS

Parameter			Comparison Criteria		
Sample ID	SB1-3	SB1-5	State Action Level	IHSB Health-Based SRG	IHSB Protection of Groundwater SRG
Collection Depth (feet bgs)	3	5			
Collection Date	10/15/15				
Total Petroleum Hydrocarbons by UVF					
GRO	<0.36	<0.19	10	--	--
Total Petroleum Hydrocarbons by UVF					
DRO	<0.14	<0.08	10	--	--
Chromium and Lead					
Chromium (Cr+3)	54.2	26.8	--	24,000	360,000
Lead	18.9	34.9	--	400	270
Hexavalent Chromium					
Cr+6	ND	NSF	--	--	--

Notes:

Results presented in milligrams per kilogram (mg/kg), parts per million (ppm)

Feet bgs = Feet below ground surface

UVF = Ultraviolet Fluorescence

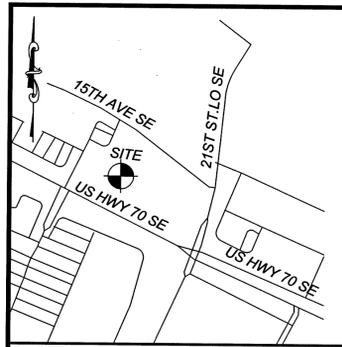
BQL = Below Quantitation Limit

ND = Not Detected

BOLD = Concentration Exceeds Action Level

IHSB = Inactive Hazardous Sites Branch

SRG = Soil Remediation Goal



VICINITY MAP
NTS

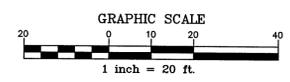
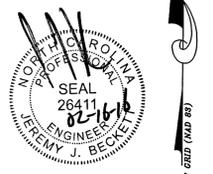
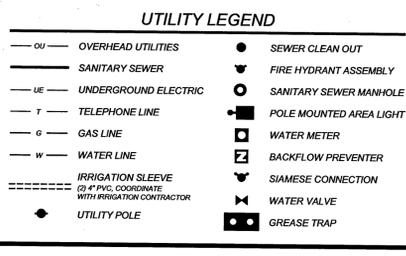
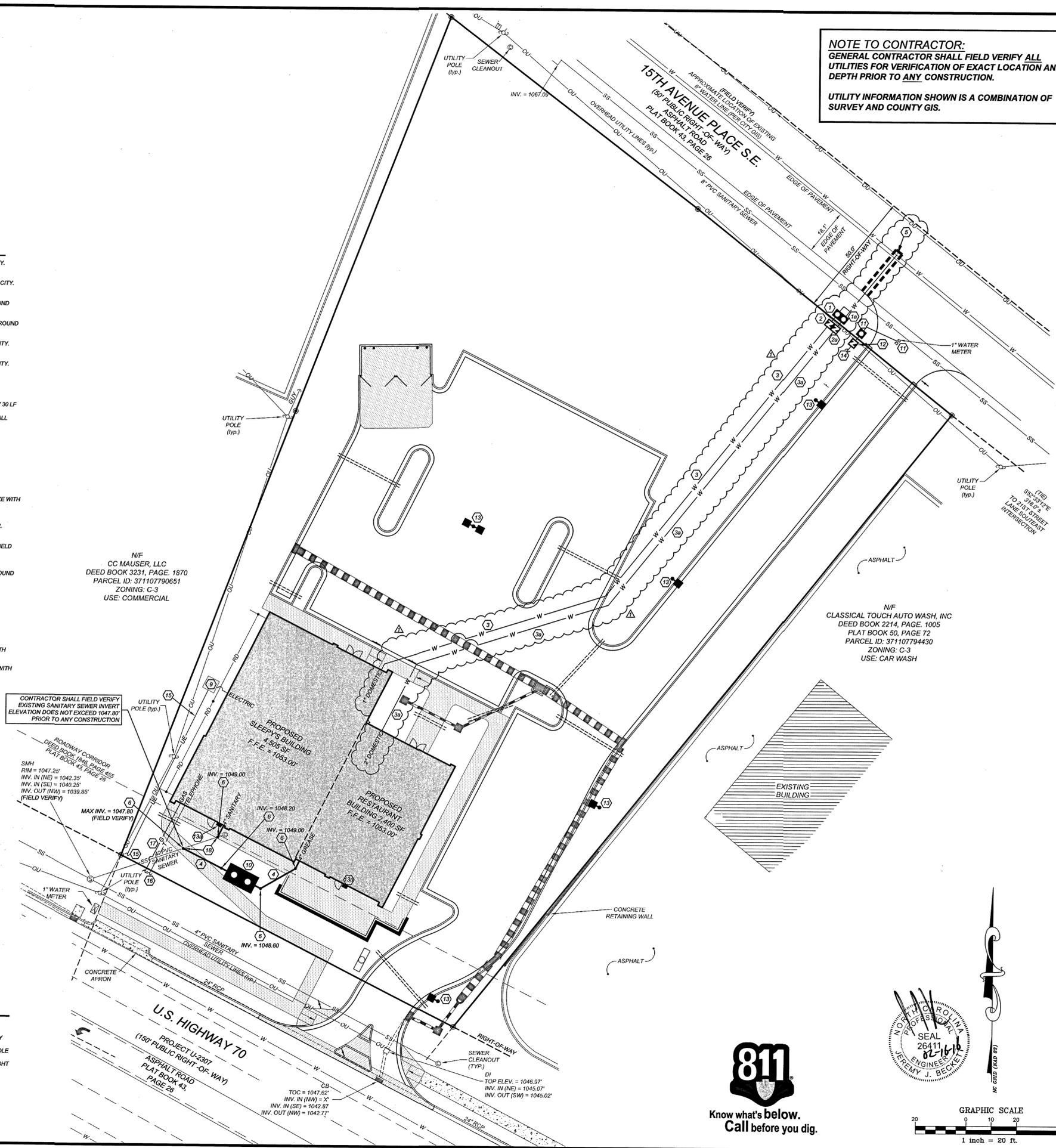
UTILITY KEYNOTES:

- 1 1" DOMESTIC WATER METER, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1 1/2" DOMESTIC WATER METER, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1" DOMESTIC REDUCE PRESSURE BACKFLOW PREVENTER IN ABOVE GROUND HEATED ENCLOSURE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1 1/2" DOMESTIC REDUCE PRESSURE BACKFLOW PREVENTER IN ABOVE GROUND HEATED ENCLOSURE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1" DOMESTIC WATER SERVICE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 2" DOMESTIC WATER SERVICE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 4" PVC SANITARY SEWER LINE AT 1/4" PER LINEAR FOOT SLOPE (MINIMUM), CONTRACTOR SHALL COORDINATE WITH CITY.
- 6" SADDLE WITH 2" CORPORATION STOP, JACK AND BORE APPROXIMATELY 30 FT TO MAKE TAP. CONTRACTOR SHALL FIELD VERIFY SIZE AND LOCATION OF EXISTING WATER MAIN PRIOR TO ANY CONSTRUCTION AND COORDINATE ALL WORK WITH CITY.
- SANITARY SEWER CLEANOUT, SEE DETAIL SHEET.
- TRAFFIC RATED SANITARY SEWER CLEANOUT, SEE DETAIL SHEET.
- EXISTING FIRE HYDRANT.
- TRANSFORMER PAD, CONTRACTOR SHALL COORDINATE LOCATION AND SIZE WITH ELECTRIC UTILITY.
- 1000 GALLON GREASE TRAP, COORDINATE WITH CITY AND MANUFACTURER.
- RELOCATE EXISTING 1" IRRIGATION WATER METER, CONTRACTOR SHALL FIELD VERIFY SIZE AND LOCATION OF EXISTING METER AND COORDINATE WITH IRRIGATION CONTRACTOR AND CITY.
- 1" IRRIGATION REDUCE PRESSURE BACKFLOW PREVENTER IN ABOVE GROUND HEATED ENCLOSURE, CONTRACTOR SHALL COORDINATE WITH CITY.
- POLE MOUNTED AREA LIGHT, SEE LIGHTING PLAN.
- BUILDING MOUNTED AREA LIGHT, SEE LIGHTING PLAN.
- COORDINATE IRRIGATION CONNECTION WITH IRRIGATION CONTRACTOR.
- UNDERGROUND ELECTRIC SERVICE, CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY.
- UNDERGROUND TELEPHONE SERVICE, CONTRACTOR SHALL COORDINATE WITH TELEPHONE COMPANY.
- GAS SERVICE, CONTRACTOR SHALL COORDINATE WITH GAS COMPANY.
- CONNECT TO EXISTING 4" SANITARY SEWER SERVICE WITH CLEANOUT. CONTRACTOR SHALL FIELD VERIFY SIZE, LOCATION, AND ELEVATION OF EXISTING SEWER SERVICE PRIOR TO ANY CONSTRUCTION TO ENSURE REQUIRED PIPE SLOPE, COVER AND CLEARANCES CAN BE ACHIEVED AND COORDINATE ALL WORK WITH CITY.

N/F
CC MAUSER, LLC
DEED BOOK 3231, PAGE. 1870
PARCEL ID: 37110790651
ZONING: C-3
USE: COMMERCIAL

NOTE TO CONTRACTOR:
GENERAL CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES FOR VERIFICATION OF EXACT LOCATION AND DEPTH PRIOR TO ANY CONSTRUCTION.
UTILITY INFORMATION SHOWN IS A COMBINATION OF SURVEY AND COUNTY GIS.

- UTILITY NOTES:**
1. UTILITY INFORMATION SHOWN HEREON WAS OBTAINED FROM THE BEST AVAILABLE SOURCE AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATIONS OF EXISTING UTILITIES AND IS RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITIES, EITHER PUBLIC OR PRIVATE, SHOWN HEREON OR NOT SHOWN HEREON. ANY REPAIRS SHALL BE DONE TO THE SATISFACTION OF THE APPROPRIATE UTILITY COMPANY.
 2. THE GENERAL CONTRACTOR SHALL CONFIRM ALL NEW UTILITY TAP LOCATIONS WITH THE UTILITY OWNERS. ALL FEES SHALL BE THE RESPONSIBILITY OF DEVELOPER.
 3. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
 4. NEW LOT LIGHT FOUNDATION BASES, CONDUIT AND WIRING ARE BY THE GENERAL CONTRACTOR. POLES, FIXTURES, ANCHOR BOLTS & HARDWARE SHALL BE COORDINATED WITH THE OWNER AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
 5. ALL NEW LOT LIGHTS AND THE MAIN IDENTIFICATION SIGN SHALL HAVE A MINIMUM 10 FEET CLEARANCE FROM ALL OVERHEAD UTILITIES.
 6. GENERAL CONTRACTOR IS RESPONSIBLE FOR PERMITS AND/OR APPROVALS NECESSARY FOR ANY WORK IN ROADWAY OR RIGHT-OF-WAY.
 7. ALL TRENCH EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH TRENCH BACKFILL DETAIL SHOWN ON THESE PLANS.
 8. MINIMUM COVER FOR CONDUITS SHALL BE 36" UNLESS OTHERWISE SHOWN OR NOTED ON THESE PLANS.
 9. ALL MANHOLES, VALVES, AND MONUMENT FRAMES SHALL BE SET TO FINISH GRADE AFTER PAVING.
 10. THE CONTRACTOR SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE STATE CONSTRUCTION SAFETY ORDERS. TRENCHES SHALL BE SHORED IN ACCORDANCE WITH OSHA.
 11. THE MINIMUM SLOPE FOR SANITARY SEWER LINES SHALL BE AS FOLLOWS: 1) 1/4" FT FOR 4" LINES AND 2) 1/8" FT FOR 6" LINES. CLEANOUTS SHALL BE PLACED AT 75' INTERVALS.
 12. ALL WATER LINES SHALL HAVE A FINAL COVER DEPTH OF 3'-0" IN NON-TRAFFIC AREAS AND 4'-0" MINIMUM IN TRAFFIC AREAS UNLESS SPECIFICALLY NOTED OTHERWISE.
 13. ALL SEWER LINES SHALL HAVE A FINAL COVER DEPTH 4'-0" IN NON-TRAFFIC AREAS AND 5'-0" MINIMUM IN TRAFFIC AREAS UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS.
 14. SANITARY SEWER SERVICES SHALL BE PVC SDR 35 TO R/W, THEN PVC SCH. 40 TO BUILDING. WATER SERVICE SHALL BE TYPE "K" COPPER.
 15. CABLE TV SERVICE ROUTING IS NOT PART OF THIS PLAN, CONTRACTOR TO COORDINATE WITH CABLE COMPANY.
 16. EXISTING MANHOLES SHOULD BE FIELD VERIFIED FOR RIMS AND INVERTS.
 17. ALL WORK SHALL BE GOVERNED BY THE LATEST EDITIONS OF THE STATE MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION, BUILDING CODE, ENERGY CONSERVATION, HANDICAP ACCESSIBILITY, NATIONAL ELECTRICAL CODES AND NATIONAL FIRE PROTECTION ASSOCIATION CODES AND AS ADOPTED BY THE AUTHORITIES HAVING JURISDICTION.
 18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
 19. CONTRACTOR SHALL GUARANTEE, FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF SYSTEMS BY OWNER, EACH AND EVERY PIECE OF APPARATUS WHICH HAS BEEN INSTALLED UNDER THIS CONTRACT.
 20. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS/METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
 21. OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING 5 FEET IN DEPTH.
 22. EXCAVATION EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRES THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
 23. EQUIPMENT AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED PROVIDED PRIOR APPROVAL HAS BEEN OBTAINED FROM THE OWNER IN WRITING PRIOR TO ORDERING OR INSTALLATION. THE CONTRACTOR SHALL WAIVE ANY CLAIM FOR ADDITIONAL COST RELATED TO THE SUBSTITUTION OF ALTERNATE EQUIPMENT.
 24. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
 25. ONLY SEWAGE NOT CONTAINING GREASE IS ALLOWED TO BYPASS THE GREASE TRAP.
 26. ALL SANITARY SEWER SERVICES AND STORM DRAIN PIPING 8" IN DIAMETER OR SMALLER SHALL BE SCH. 40 PVC WITH ADHESIVE WELDED JOINTS, UNLESS SPECIFIED OTHERWISE OR REQUIRED BY LOCAL GOVERNING MUNICIPALITY. MINIMUM SLOPES ON SANITARY SEWER SERVICES: 4" - 1/4" FT, 6" - 1/8" FT.
 27. BELOW GRADE WATER SERVICE PIPING SHALL BE TYPE "K" HARD DRAWN COPPER TUBING WITH SILVER SOLDER JOINTS. SOLDER CONTAINING LEAD SHALL NOT BE USED FOR ANY PURPOSE ON THIS PROJECT, WHERE PIPING IS REQUIRED TO RUN BELOW BUILDING SLAB, IT SHALL BE INSTALLED WITHOUT JOINTS BELOW SLAB.
 28. WATER PIPING SHALL BE CONNECTED TO BUILDING STUBS, VERIFY LOCATIONS PRIOR TO BEGINNING WATER PIPE INSTALLATION.
 29. WASTE PIPING SHALL BE CONNECTED TO BUILDING STUBS, VERIFY LOCATIONS AND INVERTS PRIOR TO BEGINNING ANY WASTE PIPE INSTALLATION.
 30. CONTRACTOR SHALL NOTIFY NORTH CAROLINA "ONE CALL" AT 800-632-4949 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENTLY.
 31. ALL UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF HICKORY PUBLIC UTILITIES AND CROSS CONNECTION CONTROL REGULATIONS AND STANDARDS.
 32. SITE UTILITY CONTRACTOR TO PROVIDE WATER, SANITARY SEWER, AND ROOF DRAIN LEADERS TO WITHIN 5 FEET OF THE BUILDING. CONTRACTOR SHALL COORDINATE SITE PLAN CONNECTIONS WITH THE ARCHITECTURAL BUILDING PLANS.
 33. SANITARY CLEANOUTS SHALL BE PLACED NO MORE THAN 75 FEET APART. CLEAN OUTS LOCATED IN PAVEMENT AREAS SHALL HAVE HEAVY DUTY TRAFFIC RATED CONSTRUCTION.
 34. CONNECTION OF SANITARY SEWER SERVICE TO AN EXISTING MANHOLE SHALL COMPLY WITH THE CITY OF HICKORY STANDARDS, INCLUDING: CORE DRILL FOR OPENING INTO MANHOLE AND INSTALL WITH FLEXIBLE BOOT. IF PAVEMENT CUT IS REQUIRED, CONTRACTOR SHALL PATCH PAVEMENT WITH A SECTION TO MATCH EXISTING PAVEMENT: 3" 1/2", 8" ABC OR BETTER.
 35. RELATION OF WATER MAINS TO SEWERS:
A. LATERAL SEPARATION OF SEWER AND WATER MAINS: WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10 FOOT LATERAL SEPARATION, IN WHICH CASE:
1. THE WATER MAIN IS LAID IN A SEPARATE TRENCH WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, OR
2. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER LINE WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND ABOVE THE TOP OF THE SEWER.
B. CROSSING A SEWER LINE OVER OR UNDER A STORM DRAIN:
WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER MAIN BOTH THE WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
C. CROSSING A WATER MAIN UNDER A SEWER MAIN:
WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN BOTH THE WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
D. CROSSING A SEWER LINE OVER OR UNDER A STORM DRAIN:
WHENEVER IT IS NECESSARY FOR A SEWER LINE TO CROSS A STORM DRAIN PIPE, THE SEWER LINES SHALL BE LAID AT SUCH AN ELEVATION THAT THE OUTSIDE OF THE SEWER LINE NEAREST TO THE STORM DRAIN PIPE SHALL MAINTAIN A 12 INCH CLEAR SEPARATION DISTANCES, OR ENCASED IN EITHER CONCRETE OR DUCTILE IRON PIPE FOR AT LEAST 5 FEET ON EITHER SIDE OF THE CROSSING.
 36. UNDERGROUND CONDUITS TO SIGNS, LOT LIGHTS, ETC., SHALL BE PLACED IN GRASS OR LANDSCAPE AREAS WHENEVER POSSIBLE. THE LOCATION OF THE CONDUIT AS SHOWN ON THESE PLANS SHALL BE CONSIDERED TO BE SCHEMATIC WITH ACTUAL LOCATION TO BE VERIFIED BY THE GENERAL CONTRACTOR. PVC SCH. 40 SLEEVES SHALL BE INSTALLED FOR ALL CONDUIT CROSSING UNDER PAVED AREAS.
 37. SEE ELECTRICAL SHEETS FOR SIZE OF CONDUIT AND WIRE ON ALL ELECTRICAL SERVICE.
 38. TRANSFORMER BY ELECTRIC COMPANY, GENERAL CONTRACTOR TO PROVIDE PAD. REFER TO ELECTRIC COMPANY SPECIFICATIONS FOR PAD CONSTRUCTION.



NO.	DATE	DESCRIPTION
1	02-09-16	CITY AND COUNTY COMMENTS

COMMERCIAL SITE DESIGN

8912 CREEDMOOR ROAD
RALEIGH, NORTH CAROLINA 27613

(919) 848-4021 FAX: (919) 848-3741
WWW.CSITDESIGN.COM

CLIENT:
INSITE REAL ESTATE, LLC
1400 16TH STREET, SUITE 300
OAK BROOK, ILLINOIS 60523

RETAIL DEVELOPMENT
2115 U.S. HIGHWAY 70 SE
CITY OF HICKORY, CATAWBA COUNTY, NORTH CAROLINA

UTILITY PLAN

PROJECT NO: INS-1501
FILENAME: INS1501-UP
DRAWN BY: DDH
SCALE: 1" = 20'
DATE: 01-22-16
SHEET NO: C-4